

REMARKS

Favorable reconsideration of this application in view of the foregoing amendments and remarks to follow is respectfully requested. Since the present amendment raises no new issues, and in any event, places the application in better condition for consideration on appeal, entry thereof is respectfully requested.

Before addressing the specific grounds of rejection raised in the outstanding Office Action, applicants have cancelled the non-elected and withdrawn claims, i.e., Claims 15-31, in this Response. The cancellation of the withdrawn claims was performed without prejudice or disclaimer and, as such, applicants reserve their right to file a divisional application directed to Claims 15-31.

In addition, applicants have also amended independent Claims 1 and 14 to positively recite *that the claimed conductive back electrode is biased to form an inversion charge layer at a bottom portion said base region at an interface between said first semiconductor layer and said insulating layer which serves as an intrinsic collector of said transistor*. Support for this amendment to Claims 1 and 14 is found throughout the specification of the instant application. See, in particular, paragraph 0007.

Since the above amendments to the claims do not introduce any new matter into the originally filed application, entry thereof is respectfully requested. Applicants observe that the foregoing amendment made to Claims 1 and 14 should be entered and considered in this Response since it clearly defines the inventive structure and in particular the function of the claimed backgate electrode.

In the outstanding Office Action, Claims 1-14 stand rejected as allegedly unpatentable over the combined disclosures of U.S. Patent No. 5,352,624 to Miwa et al. ("Miwa et al.") and Japanese Patent No. 05-243255 A to Tsuchiya ("JP '255").

Applicants respectfully submit that the combined references do not teach or suggest applicants' claimed structure which includes a *conductive back electrode that is biased to form an inversion charge layer at a bottom portion of a base region at an interface between a first semiconductor layer and an insulating layer which serves as an intrinsic collector of the claimed transistor.*

As previously argued, Miwa et al. fails to disclose any conductive back gate electrode for the disclosed bipolar transistor. Indeed, Miwa et al. discloses that the conductive back gate electrode is removed from the bipolar transistor area. See Col. 41, lines 15-18.

In the outstanding Office Action, the Examiner again asserts that Miwa et al. discloses a conductive back electrode 603b for a bipolar transistor in FIG. 21E. However, Miwa et al. clearly states that the polysilicon film 603b respectively forms a base leading electrode for the bipolar transistor, and a back gate electrode for only the MOSFET. See Col. 41, lines 41-45. In other words, the polysilicon film 603b disclosed by Miwa et al. functions only as a base leading electrode in the bipolar transistor of FIG. 21E, but not as a back gate electrode.; layer 603b functions only as a back gate electrode in the MOSFET device region. Therefore, the Examiner's assertion that Miwa et al. discloses a conductive back electrode 603b for the bipolar transistor is incorrect.

In fact, nothing in Miwa et al. teaches or suggests the use of a conductive back electrode in the bipolar transistor of FIG. 21E, much less a bipolar transistor that

comprises a *conductive back electrode that is biased to form an inversion charge layer at a bottom portion of a base region at an interface between a first semiconductor layer and an insulating layer which serves as an intrinsic collector of the claimed transistor.*

Applicants observe that in Miwa et al. the polysilicon layer 603b is the base electrode of the bipolar transistor which is doped to include dopant impurities. See Col 42, lines 20-33. There is no teaching or suggestion in Miwa et al. that when a bias is applied to the gate electrode 603b an inversion layer forms as presently claimed.

Applicants further observe that in Miwa et al. doped polySi film 603c serves as the collector electrode and, as such, it represents prior art that the claimed invention is trying to circumvent. See paragraph 0007 of the originally filed specification wherein it is stated that the claimed structure includes no impurity doped collector, which is present in Miwa et al.

JP '255 does not alleviate the above mentioned defects in Miwa et al. since the applied secondary reference also does not teach or suggest the inventive structure which includes the claimed back gate electrode *that is biased to form an inversion charge layer at a bottom portion of a base region at an interface between a first semiconductor layer and an insulating layer which serves as an intrinsic collector of the claimed structure.*

Although biasing is mentioned in JP '255 there is no teaching or suggestion of the claimed conductive back gate electrode in which an inversion charge layer is formed during biasing. As such, the claimed structures are not rendered obvious by the disclosures of Miwa et al. and JP '255.

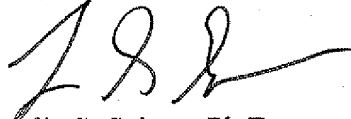
The § 103 rejection also fails because there is no motivation in the applied references which suggest modifying the disclosed structures to include the various

elements recited in the claims of the present invention. Thus, there is no motivation provided in the applied references, or otherwise of record, to make the modification mentioned above. "The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification." In re Vaeck, 947 F.2d, 488, 493, 20 USPQ 2d. 1438, 1442 (Fed.Cir. 1991).

The rejection under 35 U.S.C. § 103 has been obviated; therefore reconsideration and withdrawal thereof is respectfully requested.

In view of the foregoing amendments and remarks, it is firmly believed that the present case is in condition for allowance, which action is earnestly solicited.

Respectfully submitted,



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